Draft
Environmental Impact Report/Environmental Impact Statement
Monterey Accelerated Research System Cabled Observatory

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Abstract: The Monterey Bay Aquarium Research Institute proposes to install and operate an advanced undersea cabled observatory in Monterey Bay to provide a remote, continuous, long-term, high-power, large-bandwidth infrastructure for multidisciplinary, in situ exploration, observation, and experimentation in the deep sea. The cabled observatory would provide researchers with long-term, real-time data access to deep-sea benthic communities and ocean processes. The Project would also serve as the engineering test bed for future cabled observatories, including the proposed North-East Pacific Time Series Undersea Networked Experiments (NEPTUNE) project. The Project would consist of one science node located at the end of 31.7 miles (51 km) of submarine cable extending into Monterey Bay from the shore. The science node would contain eight science data ports, each capable of providing electrical power and a 100-Mbit-per-second, bi-directional telemetry channel for data transfer. The node would have the ability to deliver a total of 10 kilowatts (kW) of power to the 8 ports. Extension cables could be plugged into any science port to provide power and communications up to 2.5 miles (4 km) away from the original node. The node would support a variety of scientific research equipment and be utilized to test technologies, remotely operated vehicle operations, and operational management systems that would eventually be used on NEPTUNE. The Project systems would make use of the tools, techniques, and products developed over the last several decades for high reliability submarine telecommunication and military systems to ensure that this system can operate over a 25-year lifetime with minimum life-cycle cost. The first 0.89 mile (1.7 km) of the cable would be installed from shore using horizontal directional drilling (HDD) and the remainder of the cable would be installed by a cable-laying vessel towing a hydraulically operated cable plow.

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